

CLAIMS

1. A pharmaceutical composition comprising an IP<sub>3</sub> receptor-mediated calcium channel blocker.

2. The pharmaceutical composition according to claim 1 wherein the IP<sub>3</sub> receptor-mediated calcium channel blocker is a bis-1-oxaquinolizidine capable of blocking calcium release mediated by the IP<sub>3</sub> receptor.

3. The pharmaceutical composition according to claim 1 wherein the IP<sub>3</sub> receptor-mediated calcium channel blocker is selected from the group consisting of: Xestospongin C; Xestospongin A; Araguspongine B; Xestospongin D; 2-aminoethoxydiphenyl borate; and demethylxestospongin B.

4. The pharmaceutical composition according to claim 1 wherein the IP<sub>3</sub> receptor-mediated calcium channel blocker is selected from the group consisting of: Xestospongin C; Xestospongin A; and Araguspongine B.

5. The pharmaceutical composition according to claim 1 wherein the IP<sub>3</sub> receptor-mediated calcium channel blocker is XeC.

6. A method of treating HIV infection comprising:

administering an effective amount of a pharmaceutical composition comprising an IP<sub>3</sub> receptor-mediated calcium channel modulator to an individual in need of said treatment.

7. The method according to claim 5 wherein the IP<sub>3</sub> receptor-mediated calcium channel modulator is selected from the group consisting of a PLC inhibitor; an IP<sub>3</sub> receptor-mediated calcium channel blocker; a G-protein inhibitor; and mixtures thereof.

8. The method according to claim 7 wherein the  $IP_3$  receptor-mediated calcium channel modulator is a G protein inhibitor.

9. The method according to claim 8 wherein the G protein inhibitor is pertussis toxin.

5 10. The method according to claim 7 wherein the  $IP_3$  receptor-mediated calcium channel modulator is an  $IP_3$  receptor-mediated calcium channel blocker.

11. The method according to claim 10 wherein the blocker is selected from the group consisting of: Xestospongin C; Xestospongin A; and Araguspongine B.

10 12. The method according to claim 10 wherein the  $IP_3$  receptor-mediated calcium channel blocker is XeC.

13. The method according to claim 10 wherein the  $IP_3$  receptor-mediated calcium channel blocker is a bis-1-oxaquinolizidine capable of blocking calcium release mediated by the  $IP_3$  receptor.

15 14. A method of treating or preventing a disorder characterized by endoplasmic reticulum-dependent calcium release comprising:

administering an effective amount of a pharmaceutical composition comprising an  $IP_3$  receptor-mediated calcium channel blocker to an individual inflicted with the disorder characterized by endoplasmic reticulum-dependent calcium release.

20 15. The method according to claim 14 wherein the disorder is an inflammation-related disease.

16. The method according to claim 14 wherein the disorder characterized by endoplasmic reticulum-dependent calcium release is selected from

the group consisting of psoriasis, autoimmune diseases, inflammatory bowel diseases, , arthritis, multiple sclerosis, asthma, cystic fibrosis, cachexia, lupus erythromatosis, stroke, meningitis, allergies, toxic shock syndrome, anaphylactic shock, graft rejection, and hypertrophic disease.

5                   17.    The method according to claim 14 wherein the disorder is pain.

                  18.    The method according to claim 14 wherein the disorder is cardiac arrhythmia or hypertension

                  19.    The method according to claim 14 wherein the disorder is a viral disease.

10                  20.    The method according to claim 19 wherein the viral disease is selected from the group consisting of Adenovirus, Avian Leukosis Virus, Bovine Leukemia Virus, Cytomegalovirus, Epstein-Barr Virus, HIV, Hepatitis C Virus, Herpes simplex virus, Feline Leukemia Virus, Polyoma virus, Measles virus, Simian immunodeficiency virus and Simian virus 40.

15                  21.    The method according to claim 14 wherein the disorder is an uncontrolled growth disease.

                  22.    The method according to claim 21 wherein the uncontrolled growth disease is cancer.

20                  23.    The method according to claim 14 wherein the disorder characterized by endoplasmic reticulum-dependent calcium release is arthritis and the pharmaceutical composition is administered by injecting the pharmaceutical composition into an afflicted joint or applying topologically a cream including the pharmaceutical composition.

24. The method according to claim 14 wherein the disorder characterized by endoplasmic reticulum-dependent calcium release is psoriasis or a skin disease and the pharmaceutical composition is administered by topologically applying the pharmaceutical composition to an afflicted area.

5 25. A kit comprising an  $IP_3$  receptor-mediated calcium channel blocker for treating or preventing a disorder characterized by endoplasmic reticulum-dependent calcium release and instructions for administration of said  $IP_3$  receptor-mediated calcium channel blocker for the treatment of said disorder characterized by endoplasmic reticulum-dependent calcium release.

10 26. The kit according to claim 25 wherein the disorder characterized by endoplasmic reticulum-dependent calcium release is selected from the group consisting of: psoriasis, autoimmune diseases, inflammatory bowel diseases, arthritis, multiple sclerosis, asthma, cystic fibrosis, cachexia, lupus erythromatosis, stroke, meningitis, allergies, toxic shock syndrome, anaphylactic shock, graft rejection,  
15 hypertrophic disease, viral diseases and uncontrolled growth diseases.

27. The kit according to claim 26 wherein the viral disease is selected from the group consisting of Adenovirus, Avian Leukosis Virus, Bovine Leukemia Virus, Cytomegalovirus, Epstein-Barr Virus, HIV, Herpes simplex virus, Hepatitis C Virus, Feline Leukemia Virus, Polyoma virus, Measles virus, Simian  
20 immunodeficiency virus and Simian virus 40.

28. The kit according to claim 26 wherein the uncontrolled growth disease is cancer.

29. The kit according to claim 25 wherein the  $IP_3$  receptor mediated

calcium channel blocker is selected from the group consisting of Xestospongin C; Xestospongin A; Araguspongine B; Xestospongin D; 2-aminoethoxydiphenyl borate; and demethylxestospongin B.

30. The kit according to claim 25 wherein the IP<sub>3</sub> receptor-mediated  
5 calcium channel blocker is selected from the group consisting of: Xestospongin C; Xestospongin A; and Araguspongine B.

31. The kit according to claim 25 wherein the IP<sub>3</sub> receptor-mediated calcium channel blocker is XeC.